Andrea Monte

Curriculum Vitae

PERSONAL DETAILS

Address	**via Druso 137, Bolzano (BZ), Italy**
Telephone	+39 3395306766
E-mail	**andrea.monte@univr.it**
Skype	**andrea.monte92@hotmail.com**
Publications	**24**
H-Index	**10**
Citations	**169**

EDUCATION

2016- 2019

Ph.D. in Biomechanics (Doctor Europaeus recognition)

Department of Neuroscience, Biomedicine and Movement Science; University of Verona (VR), Italy

Date: 06/07/2020

Tesi: Mechanics and energetics of running at steady and non-steady speed (sprint and shuttles): the effects of muscle-tendon behaviour".

2014-2016

MSc. in Sports Science and Physical Performance. Top Grade

Department of Neuroscience, Biomedicine and Movement Science; University of Verona (VR), Italy

Date: 06/07/2020

2011-2014

BSc. in Sports and Exercise Sciences. Top Grade

Department of Neuroscience, Biomedicine and Movement Science; University of Verona (VR), Italy

2011

High school leaving the qualification of Electronics and Telecommunication Engineer

ITI Galileo Galiei, Bolzano (BZ), Italy

MAJOR RESEARCH EXPERIENCES

2022- to date **Assistant Professor (Supported by the European Council: PON Legge 240/2010-DM 1062/2021)**
Duration: 3 year
Tutor: Prof. Paola Zamparo
Project: Utilizzo, validazione s sviluppo di nuove metodiche di imaging green per il monitoraggio e la prevenzione delle patologie a carico del sistema muscoloscheletrico: la Ultrasound Radiofrequency Techinque

2021- 2022 **Postdoctoral researchear, University of Ostrava (Ostrava, CK):**
Duration: 1 year
Tutor: Prof. Daniel Jandačka
Project: Magnetic resonance imaging and biomechanics of musculoskeletal structures in research of human movement

2020- 2021 **Postdoctoral research fellow, University of Verona (Verona, IT):**
Duration: 1 year
Tutor: Prof. Paola Zamparo
Project: The role of muscle and tendon behaviour in determining the transition between walking and running in human

2019-2020 **Postdoctoral research fellow, University of Verona (Verona, IT):**
Duration: 1 year
Tutor: Prof. Paola Zamparo
Project: Muscle and tendon mechanical behaviour: differences between steady and non-stady locomotion

2016- 2019 **Ph.D. student, University of Verona (Verona, IT)**
Duration: 3 year
Tutor: Prof. Paola Zamparo
Project: Mechanics and energetics of running at steady and non-steady speed (sprint and shuttles): the effects of muscle-tendon behaviour

2019 **Visiting researcher, Liverpool John Moores University (Liverpool; UK):**
Duration: 3 weeks
Tutor: Prof. Bill Baltzopoulos and Prof. Constantinos Maganaris
Project: The influence of Achilles tendon behaviour on locomotion (apparent) efficiency during human running

2018 **Visiting researcher, Liverpool John Moores University (Liverpool; UK):**
Duration: 6 months
Tutor: Prof. Bill Baltzopoulos and Prof. Constantinos Maganaris
Project: Gastrocnemius medialis and vastus lateralis *in vivo* muscle-tendon behaviour during running at increasing speed

2016 **Visiting researcher, University of Tsukuba (Japan, JP):**
Duration: 2 weeks
Tutor: Prof. Fushji Norisha
Project: Mechanical and energetics of non-steady locomotion

RESARCH COLLABORATIONS

INTERNATIONAL

- Prof. Daniel Jandačka (University of Ostraca, CZ)
- Prof Vladimir Jura (University of Wien, AT)
- Prof. Vailios Baltzopoulos (Liverpool John Moore University)
- Prof. Constantinos Maganaris (Liverpool John Moore University)
- Prof. Fushji Norisha (University of Tsukuba)

NATIONAL

- Prof. Alberto Minetti (Univerisity of Milan)
- Dr. Gaspare Pavei Univerisity of Milan)
- Prof. Andrea D'Avella (University of Messina)
- Dr. Martino Franchi (University of Padova)
- Dr. Andrea Zignoli (University of Trento)

TEACHING

2020 – present **Lecturer in Exercise and Training Program for health (6 CFU)**
(University of Modena e Reggio Emilia).

2020 – present **Lecturer in Exercise and Training Program (Module: Methods and Technique of sport activities; 15 hours per year: 1CFU)**
(University of Verona).

2020 – present **Lecturer in Exercise and Training Program (Module: Methods and Technique of mountain sport activities; 15 hours per year: 1CFU)**
(University of Verona).

2020 – present **Lecturer at the post-graduate specialization course: "Research in Movement Sciences" (15 hours)**
(University of Verona, Supervisor: Prof. Silvia Pogliaghi).

2017 – 2020 **Teaching assistant in Clinical Biomechanics (Master class: 30 hours per year)**
(University of Verona, Supervisor: Prof. Matteo Bertucco).

- Assisted in lab tutorials;
- Delivered frontal lectures/tutorials;

2016 – 2019 **Teaching assistant in Sports Biomechanics (Master class: 30 hours per year)**
(University of Verona, Supervisor: Prof.ssa Paola Zamparo).

- Assisted in lab tutorials;
- Delivered frontal lectures/tutorials;

2014 – 2016 **Teaching assistant in Biomechanics (Bachelor class: 30 hours per year)**
(University of Verona, Supervisor: Prof.ssa Paola Zamparo).

- Assisted in lab tutorials;
- Delivered frontal lectures/tutorials;

Nomination at "Subject Expert" in Biomechanics field
(University of Verona, Department of Neuroscience, Biomedicine and Movement Sciences; Faculty of Sport Sciences).

ACCADEMIC EXPERIENCE

2020– present **Member of the ERASMUS and internationalisation board.**
(University of Verona, Department of Neuroscience, Biomedicine and Movement Sciences; Faculty of Sport Sciences).

2020– 2021 **Member of the faculty council.**
(University of Verona, Department of Neuroscience, Biomedicine and Movement Sciences; Faculty of Sport Sciences).

2014 – 2016 **Student president: member of the faculty and department council.**
(University of Verona, Department of Neuroscience, Biomedicine and Movement Sciences; Faculty of Sport Sciences).

STUDENT SUPERVISION

BACHELOR THESIS

Three theses:

1. Title: Alterazioni della meccanica contrattile muscolare indotte da stretching
   Candidate: Alessandro Cavicchia
2. Title: Differenti metodiche di allenamento nella preparazione atletica di un quattrocento-metrista: scuola italiana vs. statunitense.
   Candidate: Andrea De Iorio
3. Title: Analisi degli specifici adattamenti muscolari dell'arto inferiore nei velocisti
   Candidate: Matteo Arduini

MASTER THESIS

Eight theses:

1. Title: Confronto e validazione di strumentazioni indirette per la stima delle cruve F-V e P-C negli esercizi di forza.
   Candidate: Matteo Falcomer
2. Title: Muscle synergies and balance control during isometric task
   Candidate: Anna Benamati
3. Title: Muscle synergies during standing posture
   Candidate: Agnese Pavan

4. Title: Effetti di due trattamenti osteoapatici sulla riabilitazione sul recupero della meccanica articolare tibio-tarsica
   Candidate: Alessandro Monte
5. Title: Ultrasound analysis of fascicle and MTU mechanics during hopping
   Candidate: Paolo Tecchio
6. Title: Adattamenti neuromuscolari indotti da 10 settimane di allenamento della forza con diversi esercizi: mono vs. multi-articolari
   Candidate: Nicola Lucietto
7. Title: Validazione di un'applicazione per smartphone capace di monitorare la cinematica della corsa
   Candidate: Valentina Lando
8. Title: Effetti di un allenamento small-side-games nelle abilità biomotorie di base nei giovani calciatori.
   Candidate: Francesco Tramarin

PUBBLUCATIONS

INTERNATIONAL JOURNAL WITH IMPACT FACTOR

1. **Monte A.,** Tecchio P., Nardello F., Zamparo P. (2022) Achilles tendon mechanical behavior and ankle joint function at the walk-to-run transition. **Biology** DOI: 10.3390/biology11060912

2. **Monte A.,** Tecchio P., Nardello F., Zamparo P. (2022) Influence of muscle-belly and tendon gering on the energy cost of human walking. **Scandinavian Journal of Medicine and Science in Sports** DOI: 10.1111/sms.14142

3. Tecchio P., Zamparo P., Nardello F., **Monte A.** (2022) Achilles tendon mechanical propoerties during walking and running are underestimated when its cruvature is not accounted for. **Journal of Biomechanics** DOI: 10.1016/j.jbiomech.2022.111095

4. **Monte A.,** Bertucco M., Magris R., Zamparo P. (2021). Muscle belly gearing positively affects the force-velocity and power-velocity relationships during explosive dynamic contractions. **Frontiers in Physiology** DOI 10.3389/fphys.2021.683931.

5. **Monte A.,** Nardello F., Magri, R., Tecchio P., & Zamparo P. (2021). The influence of in vivo mechanical behaviour of the Achilles tendon on the mechanics, energetics and apparent efficiency of bouncing gaits. **Journal of experimental biology**, *224*: jeb242453. DOI: 10.1242/jeb.242453

6. **Monte A.,** Nardello F., Zamparo P. (2021). Mechanical advantage and joint function of the lower limb during hopping at different frequencies. **Journal of Biomechanics**, doi: 10.1016/j.biomech.2021.110294

7. **Monte A.,** Zignoli A. (2020). Muscle and tendon stiffness and belly gearing positively correlate with rate of torque development during explosive fixed-end contractions. **Journal of Biomechanics**, doi: 10.1016/j.jbiomech.2020.110110.

8. **Monte A.,** Baltzopoulos V., Maganaris C., Zamparo P. (2020). Gastrocnemiums Medialis and Vastus Lateralis in-vivo muscle-tendon behaviour during running at increasing speeds. **Scandinavian Journal of Medicine and Science in Sports** *DOI:* 10.1111/sms.13662

9. **Monte A.,** Magnaris C., Baltzopoulos V., Zamparo P. (2020). The influence of Achilles tendon mechanical behaviour on apparent mechanical efficiency during running at different speeds. **European Journal of Applied Physiology**; DOI: 101007/s00421-020-04472-9.

10. **Monte A.** (2020). In-vivo manipulation of muscle shape and tendinous stiffness affects the human ability to generate torque rapidly. **Experimental Physiology**, doi: 10.1113/EP089012

11. Nardello F., Bombieri F., **Monte A.** (2020). Leverage mechanical alterations during walking at self-selectd speed in ptients with Parkinson's disease. **Gait & Posture**, 79: 175-182

12. Nardello F., Bertoli E., Bombieri F., Bertucco M., **Monte A.** (2020) The effect of a secondary task on

kinematics during turning in Parkinson's disease with mild to moderate impairment. **Symmetry** DOI: 10.3390/sym12081284

13. **Monte A.,** Nardello F., Pavei., Moro S., Fest L., Tarperi C., Schena F., Zamparo P. (2020) Mechanical determinants of the energy cost of running at the half-marathon pace. **J Sports Ed Phys Fitness**, 60: 198-205.

14. **Monte A.,** & Zamparo P. (2019). Correlations between muscle-tendon parameters and acceleration ability in 20 m sprints. **PlosOne**, 24: e0213347

15. Pavei G., Zamparo P., Fujii N., Otsu T., Numazu N., Minetti A.E., **Monte A**. (2019). Comprehensive mechanical power analysis in srint running acceleration. **Scandinavian Journal of Medicine and Science in Sports**, Doi: 10.1111/sms.13520

16. Peyré-Tartaruga LA, Dewolf AH, di Prampero PE, Fábrica G, Malatesta D, Minetti AE, **Monte A**, Pavei G, Silva-Pereyra V, Willems PA, Zamparo P. (2021).Mechanical work as a (key) determinant of energy cost in human locomotion: recent findings and future directions. **Experimental Physiology**. DOI: 10.1113/EP089313.

17. Tecchio P., **Monte A.,** Zamparo P. (2021). Low-cost electromyography: validity against a commercial system depends on exercise type and intensity. **European Journal of Translational Myology**, 10.4081/ejtm.2021.9735

18. **Monte A.** (2020). Insight into the biomechanics and bioenergetics of human walking: obese versus healthy children. **Experimental Physiology** 22: 10.1113/EP088772

19. Licciardi A, Grassadonia G, **Monte A**, Ardigò LP. (2020). Match metabolic power over different playing phases in a young professional soccer team. **J Sports Med Phys Fitness**. DOI: 10.23736/S0022-4707.20.10879-X

20. Zamparo P., Pavei G., **Monte A.,** Nardello F., Otsu T., Numazu N., Fujii N., Minetti A.E. (2019). Mechanical work in shuttele running as a function of speed and distance: Implications for power and efficiency. **Human Movement Science**, 66: 487-496

21. Bruseghini P., Tam E., **Monte A.,** Capelli C., Zamparo P. (2018). Metabolic and kinematic responses while walking and running on a motorised and a curved non-motorised treadmill. **Journal of Sports Sciences**, DOI: 10.1080/02640414.2018.1504605

22. **Monte A.**, Nardello F., Zamparo P. (2016). Sled Towing: The Optimal Overload for Peak Power Production. **International Journal Sport Physiology and Performance**, DOI: /10.1123/ijspp.2016-0602

23. Zamparo P., Pavei G., Nardello F., Bartolini D., **Monte A.**, Minetti A.E. (2016). Mechanical work and efficiency of 5+5 m shuttle running. **European Journal of Applied Physiology**, 116: 1911-1919

24. **Monte A.**, Muollo V., Nardello F., Zamparo P. (2016). Sprint running: how changes in stride frequency affect running mechanics and leg spring behaviour at maximal speed. **Journal of Sports Science**, 30:1-7

INTERNATIONA and NATIONAL CONFERENCES

International conferences: Oral Presentations

1. **Monte A.,** Tecchio P., Nardello F., Zamparo P. (2022) Achilles tendon mechanical behavior and ankle joint function at the walk-to-run transition. 27th ECSS Congress, Seville (Spain).
2. **Monte A.,** Skypala J., Uchytil J., Juras V., Jandacka D. Association between T2* relaxation time and the mechanical paramters of the Achilles tedon in trained and untrained populations: preliminary data. 40th Conference of the Internation Society of Biomechanics in Sports, Liverpool (UK)
3. **Monte A.,** Bachero-Mena B., Tecchio P., Nardello F., Ardigò L.P., Zamparo P.The U-shaped relationship between energy cost and walking speed can be explained by belly and tendon gearing? 27th ECSS Congress, Online.

4. **Monte A.,** Bertucco M., Zamparo P. (2020). Concentric vs. Isometric contraction: the role of neuromuscular paramters in determining explosive force capacity. 25th ECSS Congress, Seville (Spain).
5. **Monte A.,** Maganaris C., Zamparo P., Baltzopoulos V. (2019). Influence of knee extensor and plantar flexor muscle-tendon behaviour on the energy cost of running at different speeds. 24th ECSS Congress, Prague (Czech Republic).
6. **Monte A.,** Giuriato G., Zamparo P. (2018). *Muscle geometry and neuromuscular characteristics in (male and female) power athletes versus untrained individuals.* 23th ECSS Congress, Dublin (Irland)
7. **Monte A.,** and Zamparo P. (2017). Force generation in sprint running is related to muscle properties in male sprinters. 35th ISBS Congress, Cologne (G).
8. **Monte A.**, Nardello F., Zamparo P. (2016). Sled towing: a kinematic analysis to determine the optimal training load. 21th ECSS Congress, Wien (A).

International conferences: Poster Presentations

1. **Monte A.,** Pavan A., Benamati A., d'Avella A., Bertucco M. (2021). Muscle synergies during isometric maintanance of uprigth standing postur under directional pulling forces. Society fro the Neural Control of Movement (Virtual conference).

National conferences: Oral Presentations

1. **Monte A.,** Bachero-Mena B., Tecchio P., Nardello F., Ardigò L.P., Zamparo P. The transition between walking and running: muscle and tendon behavior can explain the transition between gaits? 12th SISMES Congress, Padova (IT)
2. **Monte A.,** Maganaris C., Zamparo P., Baltzopoulos V. (2019) Neuromuscular responses to different strength training for the quadriceps: mono vs. multi-articular exercise. 11th SISMES Congress, Bologna (IT).
3. **Monte A.,** Bertucco M., Zamparo P. (2019). The effect of contraction speed and muscle geometty on "explosive" voluntary contractions. "Lavori in corso", Milan (IT)
4. **Monte A.,** & Zamparo P. (2017). Mechanical power, muscle characteristics and sprint performance. "Lavori in corso", Milan; Italy.
5. **Monte A.,** Aceto A., Aieta A., Boscaro D., Zamparo P. (2017). Acute effects of weights vest on sprint training in mechanical power production and injury risk. 9th SISMES Congress, Brescia, (IT).
6. **Monte**, F. Nardello, P. Zamparo. (2016). The optimal load in sled towing to maximize mechanical power without changes in running technique. 8th SISMES Congress, Roma (IT)

National conferences: Poster Presentations

1. **Monte A.**, Nardello F., Vaccari F., Zamparo P. (2016). Lower limb muscles activity during sled towing with different loads. 8th SISMES Congress, Roma (IT),
2. **Monte A.**, Muollo V., Nardello F., Zamparo P. (2015). Sprint running: how changes in stride frequency affect leg and vertical stiffness at ''maximal running speed''. 7th SISMES Congress, Padova (IT)

CHAIR MANAGEMENT AT INTERNATIONAL AND NATIONAL CONGRESS

INTERNATIONAL CONGRESS

1. External reviewer for ASB (American Society of Biomechanics) Virtual congress 2021

2. External reviewer for ASB (American Society of Biomechanics) Calgary 2020

3. Chairman: Muscle/Tendon function: 3 July 2019, 24th ECSS Congress, Prague (Czech Republic).

4. Chairman: Neuromuscular Physiology 31 August 2022, 27th ECSS Congress, Seville (Spain).

5. Chairman: Biomechanics and kinematics 01 September 2022, 27th ECSS Congress, Seville (Spain).

EDITORIAL ACTIVITY

Reviewer

1. Medicine & Science in Sports & Exercises; **2.** Journal of Applied Physiology; **3.** Experimental Physiology; **4.** Journal of Biomechanics; **5**. Frontiery in Physiology; **6.** Scandinavian Journal of Medicine and Science in Sports; **7.** European Journal of Applied Physiology; **8.** Scientific Reports; **9.** Human and Movement Sciences; **10.** International Journal of Sports Physiology and Performance; **11.** Journal of Sport Sciences; **12.** PlosOne; **13.** PeeJ

Reviewing Editors

1. Experimental Physiology: https://physoc.onlinelibrary.wiley.com/hub/journal/1469445X/editorial-board/editorial-board

2. Frontiers in Physiology: https://loop.frontiersin.org/people/1276989/overview

INVITED SPEAKER

21 talks at national workshop, meetings or congress about:

- *Muscle tendon mechanics*
- *Training adaptations*
- *Muscle and tendon interaction in human locomotion*
- *Sprint acceleration and training strategies*
- *Specific and generic strength training exercises for sprinter*

GRANT and PRICE

2021 YIA ECSS: winner of the young investigator award (Oral presentation) of the European College of Sport Sciences
price: 1000.00 euro

2018 International Cooperation grant 2018 for the project: "*The influence of muscle and tendon mechanical behaviour on running mechanics and energetics*".
price: 3500.00 euro

2017 Best PhD Study University's Award for the project: "*Mechanics and energetics of running at steady and non-steady speed (sprint and shuttles): the effects of muscle-tendon behaviour*".
price: 400.00 euro

2016 CARIVERONA PhD grant for three years.
price: 45000.00 euro

BOOK

1. **Translation from English to Italian for Calzetti & Mariucci**
   Title: Sports Biomechanics.
   Author: Anthony Blazevich, Calzetti & Mariucci edition, 2017.

OTHER RESEARCH SKILS

INTRUMENTATIONS

Biomechanical device

- ***Motion capture:*** Vicon and Qualysis
- ***MRI:*** Ingenia 1.5T Philips
- ***Intrumented tradmill:*** MOTEK, Bertec
- ***Force plates:*** AMTI and Kistler
- ***Load cell***
- ***EMG***: Delsys, Zerowire, BioPac
- ***Dynamometer***: Cybex and Biodex
- ***Ulstrasound***: HelathCare, Siemens, Philips, Telemed, SuperSonic

Physiological device

- ***Metabolimeter:*** Cosmed CPET, Quark B2, K4, K5, Cortex Metalyzer
- ***Lactate measurements***
- ***Physioflow***

- ***Treadmill and Ergometers***

PRGRAMMING AND DATA ANALYSIS

- ***Matlab*** (excellent skills)
- ***LabView*** (excellent skills)
- ***C++*** (good skills)
- ***MoCap***: NEXUS, SiMi motion
- ***Modelling***: OpenSim, Visual 3D
- ***Video and Image***: Tracker Motion, ImageJ, Osirix, Kinovea, DartFish
- ***Data analysis***: LabChart ADInstruments; BioPac, ORIGIN
- ***Statistics***: SPSS (IBM), R.
- ***Microsoft office:*** (Excel, Word, PowerPoint)

LANGUAGES

(Common European Framework Of Reference For Languages)	**Italian**	**German**	**English**
Reading	Native language	B1	C1
Writing		B1	C1
Speaking		B1	C1

Verona, 03/09/2022
Andrea Monte